

OVER
55
YEARS

of success



FLAT MOUNTED BEARINGS TYPE FMB



PM is a high-end bearing and customised (mechatronic) system supplier, offering full vertical integration from (co-) engineering to production, assembly and qualification - all performed in-house.





INTRODUCTION

Since 1966, PM has been designing and manufacturing innovative, high-quality precision linear bearings and slides at our research and production facilities in the Netherlands. We specialise in delivering solutions to meet the unique demands of a wide range of industries. As a trusted partner to hundreds of global industry leaders, our clients span sectors such as semiconductors, medical technology, metrology, industrial automation, space, and defense.

COMPANY

The exceptional quality of PM products stems from our highly specialized manufacturing machinery and facilities. Our production facility is temperature-controlled and designed to minimize distortions caused by vibrations. Additionally, our precision rails are produced using customized, non-standard machinery. This commitment to quality makes PM an attractive supplier for various high-tech industries, including semiconductors, optics, and life sciences.

NEXT-GENERATION PRODUCTS

At PM, we continuously integrate the latest technologies to enhance the performance and functionality of the existing product range. This approach allows us to meet the ever evolving demands of high-tech industries, where precision, reliability, and compactness are critical.

Our clients value PM for our ability to engineer solutions that deliver maximum performance, even in the most space-constrained applications. Through ongoing innovation and refinement, we take proven designs to the next level, raising the bar for what's possible in precision motion.

The following product is a result of our commitment to meet the demands for next-generation equipment::

- **Miniature Slide MSR:** A compact linear slide designed for high load capacity in very limited spaces. It includes crossed roller bearings and an anti-cage creep mechanism. The slides are made entirely of stainless steel.

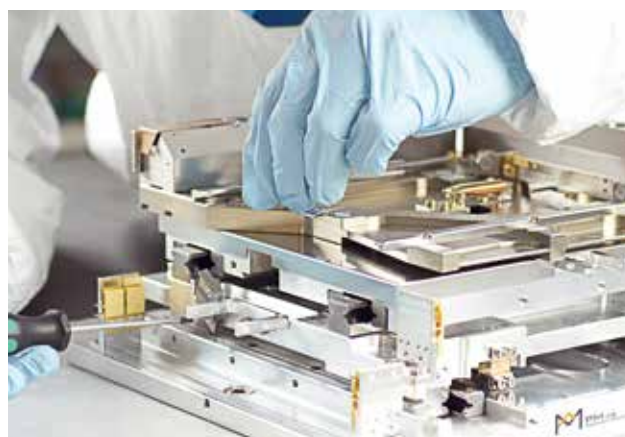
CUSTOMISED PARTS

In addition to offering high-quality standardised products, we design and manufacture engineered linear bearings and positioning systems meeting our clients' application-specific requirements.

PM combines the latest knowledge from its in-house R&D department, developments in manufacturing technology more widely as well as performance insights generated by industry deployment of precision applications.

Over the past 55 years PM has expanded its reach to serve a global client base. Our experienced, multilingual engineering and sales teams stand ready to work with you in realising your demanding projects.

Technical data in this catalogue is based on standard quality grade Q8 (no suffix). For higher quality grades please contact our product experts to discuss your requirements.



DISCLAIMER

This catalogue is the result of a comprehensive revision of its previous edition. It reflects the latest advancements in linear bearing technology, as well as insights gathered from industry applications. Any information from previous editions that does not correspond to the data in this current edition is, therefore, invalid. Due to the continuous development of our product range, we reserve the right to make modifications without prior notice.

© Copyright 2025, 4th edition
PM B.V. - Discover Precision

Reproduction in part or in whole is only allowed with written authorization of PM.



The precision Flat Mounted Table Bearing (FMB) consists of two through-hardened standard bearing steel rings and a Teflon cage filled with precision-matched steel balls. The custom-designed ball groove increases load capacity and stiffness under moment loading, while ensuring high precision, longer service life, and a very low coefficient of friction. Pre-drilled attachment holes ensure easy installation.

MATERIAL

Rings and balls are made of bearing steel 1.3505, hardness 58 - 62 HRC. Ball cage material teflon.

FEATURES AND SPECIFICATION

- Low profile and space-saving design
- Simple installation thanks to pre-drilled attachment holes, the bearing can be installed on the mounting surface and tightened down by attachment screws
- Maintenance free teflon ball cage
- High load capacity: the custom developed gothic arc shaped V-groove, by virtue of its geometry, provides a greater contact area and high precision. They are factory preloaded by means of geometry pairing
- FMB bearings operate under different conditions and therefore supplied in two preload classes V0 (0.02C) and V1 (0.08C)
N-class: the industry standard
P-class: only available on request
- Space-saving design: This bearing is a great option for reducing the size of many types of precision rotary bearing systems. The FMB's compact design, as low as 8 mm in height, can replace a double back or face mounted angular contact bearing pair, constituting substantial savings in space and cost

OPTIONAL FEATURES

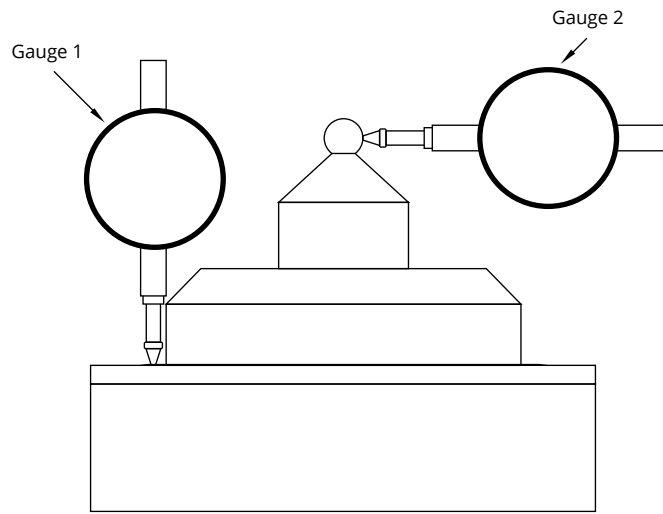
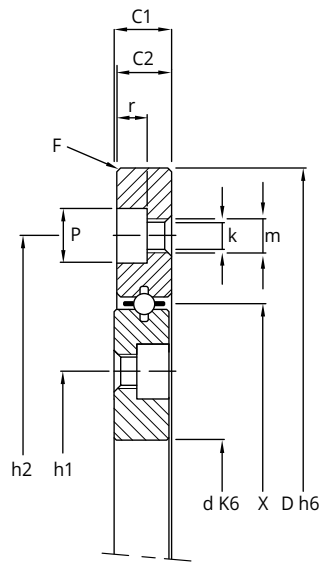
- Defined push force
- Outside diameters up to 500 mm
- Full stainless steel version
- Customised pre-drilled holes
- Crossed roller version
- Double row balls
- Special coatings such as Durni-coat to improve corrosion resistance
- UHV compatible version incl. lubricants
- Cleaning and packaging available according to various ISO cleanroom standards
- Defined preload

ORDER NOTES

Please specify the following in your order note:

- Model no. and quantity needed
- Preload class and precision class

Example: 2 pieces type FMB 60.140.V0.N



Measuring set up

Type	Main dimensions												C _{dyn} ¹
	D h6	d K6	C	C1	h1	h2	X	m	k	p	r	z ²	(N)
FMB 40.120	120	40			60	100	80					8	6070
FMB 60.140	140	60			80	120	100			-		8	7047
FMB 80.160	160	80	8.5	8	100	140	120	M5	4.3	8	4.5	8	8100
FMB 100.180	180	100			120	160	140					12	9153
FMB 120.200	200	120			140	180	160					12	10.125
FMB 140.220	220	140			160	200	180					12	11.178
FMB 150.250	250	150	10.5	10	175	225	200	M6	5.2	9.5	5.5	12	12.717
FMB 200.300	300	200			225	275	250					12	15.228
FMB 250.350	350	250	12.5	12	275	325	300	M6	5.2	9.5	5.5	12	20.331

¹ Load ratings according to ISO 281

Units: mm

² Number of attachment holes per ring

Type	Weight (kg)	Axial runout (μm)		Eccentricity (μm)		Wobble (μm)	
		N Class	P Class	N Class	P Class	N Class	P Class
FMB 40.120	0.57	4	1	3	1	3	2
FMB 60.140	0.72	4	2	3	2	3	3
FMB 80.160	0.90	4	2	4	2	4	3
FMB 100.180	1.00	5	2	5	2	4	4
FMB 120.200	1.15	5	2	5	2	5	4
FMB 140.220	1.30	6	3	6	3	6	4
FMB 150.250	2.30	8	4	8	4	8	6
FMB 200.300	2.90	8	5	8	5	8	6
FMB 250.350	4.15	10	6	10	6	10	6

Axial run-out (gauge 2): maximum axial variation of outer ring in comparison to the centre of rotation.

Eccentricity: also referred to as concentricity, defines the deviation of the centre of rotation from its mean position over one revolution.

Wobble (gauge 1): angular deviation of the axis of rotation over one revolution.

Bold = Short lead time item

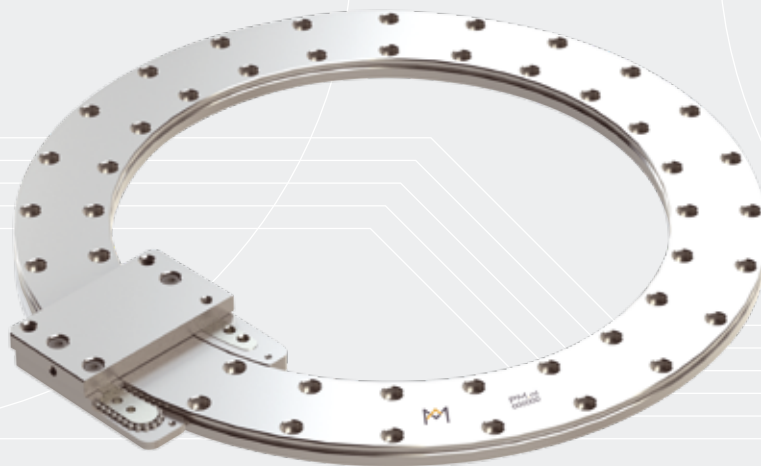
Regular = Long lead time item - please ask us about prices and lead times

CUSTOMISED PRODUCTS

Ball or roller diameter and preloaded precision concentricity guide.

Outer diameter sizes available up to 500 mm.

Please contact us for expert product advice.





The image shows a laptop screen displaying the Mecalux website. The website is in Spanish, with the header showing 'Mecalux' and navigation links like 'About Us', 'Products', 'Resources', and 'Contact'. The main content area is titled 'Specifications' and features a table of technical specifications for the Pallet Shuttle system. The table includes columns for 'Type', 'Weight (kg)', 'Load (kg)', 'Shuttle speed', 'A (mm)', 'B (mm)', 'C (mm)', 'D (mm)', and 'Footprint'. The table lists various models such as STS 1020, STS 1120, STS 1240, STS 1320, STS 1520, STS 1620, STS 1820, STS 1920, STS 2020, STS 2120, STS 2220, STS 2320, STS 2420, STS 2520, STS 2620, STS 2720, STS 2820, STS 2920, STS 3020, STS 3120, STS 3220, STS 3320, STS 3420, STS 3520, STS 3620, STS 3720, STS 3820, STS 3920, STS 4020, STS 4120, STS 4220, STS 4320, STS 4420, STS 4520, STS 4620, STS 4720, STS 4820, STS 4920, STS 5020, STS 5120, STS 5220, STS 5320, STS 5420, STS 5520, STS 5620, STS 5720, STS 5820, STS 5920, STS 6020, STS 6120, STS 6220, STS 6320, STS 6420, STS 6520, STS 6620, STS 6720, STS 6820, STS 6920, STS 7020, STS 7120, STS 7220, STS 7320, STS 7420, STS 7520, STS 7620, STS 7720, STS 7820, STS 7920, STS 8020, STS 8120, STS 8220, STS 8320, STS 8420, STS 8520, STS 8620, STS 8720, STS 8820, STS 8920, STS 9020, STS 9120, STS 9220, STS 9320, STS 9420, STS 9520, STS 9620, STS 9720, STS 9820, STS 9920, STS 10020, STS 10120, STS 10220, STS 10320, STS 10420, STS 10520, STS 10620, STS 10720, STS 10820, STS 10920, STS 11020, STS 11120, STS 11220, STS 11320, STS 11420, STS 11520, STS 11620, STS 11720, STS 11820, STS 11920, STS 12020, STS 12120, STS 12220, STS 12320, STS 12420, STS 12520, STS 12620, STS 12720, STS 12820, STS 12920, STS 13020, STS 13120, STS 13220, STS 13320, STS 13420, STS 13520, STS 13620, STS 13720, STS 13820, STS 13920, STS 14020, STS 14120, STS 14220, STS 14320, STS 14420, STS 14520, STS 14620, STS 14720, STS 14820, STS 14920, STS 15020, STS 15120, STS 15220, STS 15320, STS 15420, STS 15520, STS 15620, STS 15720, STS 15820, STS 15920, STS 16020, STS 16120, STS 16220, STS 16320, STS 16420, STS 16520, STS 16620, STS 16720, STS 16820, STS 16920, STS 17020, STS 17120, STS 17220, STS 17320, STS 17420, STS 17520, STS 17620, STS 17720, STS 17820, STS 17920, STS 18020, STS 18120, STS 18220, STS 18320, STS 18420, STS 18520, STS 18620, STS 18720, STS 18820, STS 18920, STS 19020, STS 19120, STS 19220, STS 19320, STS 19420, STS 19520, STS 19620, STS 19720, STS 19820, STS 19920, STS 20020, STS 20120, STS 20220, STS 20320, STS 20420, STS 20520, STS 20620, STS 20720, STS 20820, STS 20920, STS 21020, STS 21120, STS 21220, STS 21320, STS 21420, STS 21520, STS 21620, STS 21720, STS 21820, STS 21920, STS 22020, STS 22120, STS 22220, STS 22320, STS 22420, STS 22520, STS 22620, STS 22720, STS 22820, STS 22920, STS 23020, STS 23120, STS 23220, STS 23320, STS 23420, STS 23520, STS 23620, STS 23720, STS 23820, STS 23920, STS 24020, STS 24120, STS 24220, STS 24320, STS 24420, STS 24520, STS 24620, STS 24720, STS 24820, STS 24920, STS 25020, STS 25120, STS 25220, STS 25320, STS 25420, STS 25520, STS 25620, STS 25720, STS 25820, STS 25920, STS 26020, STS 26120, STS 26220, STS 26320, STS 26420, STS 26520, STS 26620, STS 26720, STS 26820, STS 26920, STS 27020, STS 27120, STS 27220, STS 27320, STS 27420, STS 27520, STS 27620, STS 27720, STS 27820, STS 27920, STS 28020, STS 28120, STS 28220, STS 28320, STS 28420, STS 28520, STS 28620, STS 28720, STS 28820, STS 28920, STS 29020, STS 29120, STS 29220, STS 29320, STS 29420, STS 29520, STS 29620, STS 29720, STS 29820, STS 29920, STS 30020, STS 30120, STS 30220, STS 30320, STS 30420, STS 30520, STS 30620, STS 30720, STS 30820, STS 30920, STS 31020, STS 31120, STS 31220, STS 31320, STS 31420, STS 31520, STS 31620, STS 31720, STS 31820, STS 31920, STS 32020, STS 32120, STS 32220, STS 32320, STS 32420, STS 32520, STS 32620, STS 32720, STS 32820, STS 32920, STS 33020, STS 33120, STS 33220, STS 33320, STS 33420, STS 33520, STS 33620, STS 33720, STS 33820, STS 33920, STS 34020, STS 34120, STS 34220, STS 34320, STS 34420, STS 34520, STS 34620, STS 34720, STS 34820, STS 34920, STS 35020, STS 35120, STS 35220, STS 35320, STS 35420, STS 35520, STS 35620, STS 35720, STS 35820, STS 35920, STS 36020, STS 36120, STS 36220, STS 36320, STS 36420, STS 36520, STS 36620, STS 36720, STS 36820, STS 36920, STS 37020, STS 37120, STS 37220, STS 37320, STS 37420, STS 37520, STS 37620, STS 37720, STS 37820, STS 37920, STS 38020, STS 38120, STS 38220, STS 38320, STS 38420, STS 38520, STS 38620, STS 38720, STS 38820, STS 38920, STS 39020, STS 39120, STS 39220, STS 39320, STS 39420, STS 39520, STS 39620, STS 39720, STS 39820, STS 39920, STS 40020, STS 40120, STS 40220, STS 40320, STS 40420, STS 40520, STS 40620, STS 40720, STS 40820, STS 40920, STS 41020, STS 41120, STS 41220, STS 41320, STS 41420, STS 41520, STS 41620, STS 41720, STS 41820, STS 41920, STS 42020, STS 42120, STS 42220, STS 42320, STS 42420, STS 42520, STS 42620, STS 42720, STS 42820, STS 42920, STS 43020, STS 43120, STS 43220, STS 43320, STS 43420, STS 43520, STS 43620, STS 43720, STS 43820, STS 43920, STS 44020, STS 44120, STS 44220, STS 44320, STS 44420, STS 44520, STS 44620, STS 44720, STS 44820, STS 44920, STS 45020, STS 45120, STS 45220, STS 45320, STS 45

PM RESEARCH AND PRODUCTION FACILITIES



PM B.V.

Galileistraat 2
7701 SK Dedemsvaart
The Netherlands

Phone: +31 523 61 22 58

Email: info@PM.nl

www.PM.nl

2025